

REMARKS

Summary

Claims 1-3, 5, 6, 8-13, and 16-34 are pending. Claims 1, 5, 6, 11, 17, and 32 have been amended. No new matter has been added.

Examiner Interview

Applicants thank Examiner Lamprecht for the telephonic interview extended on May 13, 2009. During the interview, U.S. Patent No. 7,011,814 (“Suddarth”) was discussed. No agreement was reached.

Rejections under 35 U.S.C. §103(a)

Claims 1-3, 5, 6, 8-13, and 16-34 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,661,870 (“Kapatoes”) in view of Suddarth.

Claim 1

Claim 1, as amended, recites “automatically monitoring by observation or measurement of one or more physiological characteristics of the patient at an area external to said area of interest that could affect the effectiveness of said initial prescription.”

Kapatoes describes compensating for unexpected changes in the size, shape, and/or position of a tumor in the delivery of radiation therapy by comparing first and second images to determine if any combination of the size, shape, or position of the tumor or sensitive structures has changed. *See* Abstract.

As acknowledged by the Examiner, Kapatoes does not disclose monitoring external factors. *See* Office Action, p. 4. More specifically, Kapatoes does not describe automatically monitoring by observation or measurement of one or more physiological characteristics of the patient at an area external to said area of interest, as required by claim 1.

Suddarth does not fill in the gaps left by Kapatoes. Suddarth describes monitoring in vivo detected radiation in a target localized site within a subject. *See* Abstract. In Suddarth, radiation is monitored by sensor 25 which may be either a catheter or a fiber optic probe. *See* col. 23, lines 51-55; fig. 4b. A radiation sensor monitors radiation and is not capable of monitoring by observation or measurement one or more physiological characteristics of the patient.

Suddarth also describes that “metabolic and/or biokinetic response of the subject” is determined and broadly describes the monitoring as a “general metabolic assessment.” *See* col. 6,

line 27; col. 7, lines 63-67. However, the monitoring in Suddarth always begins with the detection of radiation. For example, “[t]he present invention provides ... for in vivo dynamic monitoring of detected radiation which is emitted from localized tissue... [and] the data can be used, inter alia, to: ...evaluate metabolic activity or behavior.” *See* col. 6, lines 21-44. Detecting radiation to monitor metabolic activity is not monitoring by observation or measurement of one or more physiological characteristics of the patient at an area external to said area of interest.

For these reasons, Applicants respectfully submit that none of Kapatoes, Suddarth, or combinations thereof teach or suggest all of the features of claim 1. Therefore, the rejection of claims 1-3, 5, 6, 8-13, and 16 should be withdrawn.

Claim 17

Claim 17, as amended, recites “automatically monitoring by observation or measurement of one or more physiological characteristics of the patient that could affect effectiveness of said automatically delivering said first dose of therapeutic radiation to said area of interest of said patient based on said diagnosis process, wherein said automatic monitoring of one or more physiological characteristics of the patient is performed external to said area of interest.”

For the reasons addressed above with respect to claim 1, none of Kapatoes, Suddarth, or combinations thereof teach or suggest all of the features of claim 17.

Therefore, Applicants respectfully request that the rejection of claim 17-32 and 34 be withdrawn.

Claim 31

Claim 31 recites “automatically determining a positional plan from said positional image set, wherein said positional plan defines dose volume statistics; automatically comparing said positional plan with said reference plan so as to automatically generate a modified reference plan.” The Office Action does not address these features of claim 31.

Kapatoes does not describe determining a position plan from a positional image set and comparing the position plan with a reference plan so as to automatically generate a modified reference plan. Suddarth does not fill in the gaps left by Kapatoes. Therefore, Kapatoes, Suddarth, and combinations thereof fail to teach or suggest the subject matter of claim 31. Applicants respectfully request that the rejection of claim 31 be withdrawn.

Claims 33 and 34

Claims 33 and 34 recite “wherein the first therapeutic application occurs during a first session of a treatment plan and the second therapeutic application occurs during a subsequent session of the treatment plan.”

Kapatoes discloses that changes to the area of interest may be investigated either “when therapy is to begin” but before it has begun. *See* col. 5, lines 58-59. Another embodiment discloses that “fluence adjustment is computed during the application of the prescribed radiation,” but from an image taken “simultaneously with or after the application of the prescribed radiation” and adjustments are performed “while the patient is still in position.” *See* col. 7, lines 7-22.

In one scenario, Kapatoes investigates changes to the area of interest before any radiation therapy has begun. In the other, Kapatoes investigates changes to the area during a single radiation therapy session.

Therefore, Kapatoes does not teach or suggest that the first therapeutic application occurs during a first session of a treatment plan and the second therapeutic application occurs during a subsequent session of the treatment plan. Suddarth does not fill in the gaps left by Kapatoes.

For these reasons, it is respectfully submitted that Kapatoes, Suddarth, and combinations thereof fail to teach or suggest the subject matter of claims 33 and 34. Therefore, the rejections of claims 33 and 34 should be withdrawn.

CONCLUSION:

Applicants respectfully submit that all of the pending claims are in condition for allowance and seeks early allowance thereof.

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